Sudbury District
Fisheries Management Plan
1987-2000

Background Information and Optional Management Strategies and Tactics

A Summary

Ontario

Ministry of Natural Resources

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1.0 INTRODUCTION

1.1 Purpose

The Sudbury District Fisheries Management Plan is being prepared to develop approved long-term management direction for fisheries resource managers and to involve others in the decision making process. The Ministry of Natural Resources has a Northeastern Ontario Strategic Land Use Plan (S.L.U.P., 1982) which provides a framework for resource planning at the district level. The District Land Use Guidelines (D.L.U.G.) outline objectives and targets for both recreational and commercial use of Sudbury's land and waterbased resources as well as general management strategies to achieve targets. The District Fisheries Management Plan (D.F.M.P.) will indicate specifically how the Ministry proposes to conduct fisheries management in Sudbury District. Long term management strategies will be identified to the year 2000 to coincide with the planning horizon provided in the District Land Use Guidelines. Short-term operational tactics, to be implemented during the initial five years of the Plan, will also be provided. The Fisheries Management Plan will be reviewed at the conclusion of the initial 5 year phase. Implementation schedules will be prepared for each successive five year time frame, pending results of the review process. Work plans will be prepared annually, to provide a priority schedule of when and where fisheries management projects will be conducted.

The following document summarizes background information about the district's fisheries resource, use of the resource, perceived concerns and potential management strategies and tactics.

Anyone interested in how the district's fisheries will be managed is encouraged to read this summary and provide comments or suggestions. All comments and suggestions received will be reviewed for consideration in preparation of the draft Fisheries Management Plan.

1.2 FISHERIES MANAGEMENT PLANNING PROCESS

Development of a Fisheries Management Plan for Sudbury District involves six steps. The first step involved completion of a Terms of Reference document which outlined what was to be accomplished, who would be involved in the planning process and when each stage would be completed.

Objectives and targets to be achieved (Step Two) were identified in the North Eastern Ontario Strategic Land Use Plan (1982), District Land Use Guidelines (1983) and the Lake Huron Strategic Fisheries Management Plan (1987). These will be incorporated into the Fisheries Management Plan and may be revised to reflect improved knowledge and the changing resource base.

The third stage involved collection and analysis of background information on the district fisheries resource. This information was then used to identify concerns and issues.

The identification and evaluation of optional fisheries management strategies which will provide various means of achieving objectives and meeting targets was included in Step Four.

Information from the preceding three stages has been combined in this summary report. Public involvement is now being sought to confirm the accuracy of the background data, to help define concerns and issues; comment on the proposed management strategies and participate in the selection of preferred options. Preparation of the draft Management Plan will incorporate public comments.

The last step in the process will be preparation of a final Fisheries Management Plan including the initial implementation schedule. Following its approval by the Northeastern Regional Director of the Ministry of Natural Resources, a final public notice will be given through media and mail to advise that the planning process has been completed and the Plan is available for inspection.

The District Planning team will participate in the completion of each document planning process to ensure integration with all resource management programmes. An advisory team composed of representatives of various user groups and a representative from the Ministry of Tourism and Recreation will also participate in this review process.

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1.3 DETAILED BACKGROUND REPORT

Detailed background information about Sudbury District's fisheries resource has been collected and summarized in a report containing a series of maps and tables. The report contains information about District waterbodies and their fish production capabilities, i.e., criticial fish habitats, fisheries resource use and projected demand, target refinement, issues and concerns as well as present and proposed management strategies. The complete Background Information is available for inspection at the District office by interested individuals seeking more information about the basis for selection of optional management strategies presented in this summary.

2.0 BACKGROUND INFORMATION

2.1 The Resource Base

2.1.1 Perspective

The Sudbury Administrative District is located in the mideastern portion of the Ministry of Natural Resources' Northeastern Region (Figure 1). It covers a total surface area of 15,511 square kilometers of which the waters of Georgian Bay encompass 1,554 square kilometers. Sudbury District is situated approximately 390 kilometers north of Toronto, 300 kilometers east of Sault Ste. Marie and 125 kilometers west of North Bay. Approximately 94% of the District's 177,000 residents live within the Regional Municipality of Sudbury.

Crown land extends over 82% of the District. An additional 1% of the land base is held under Federal ownership, largely in the form of three Indian

MAP 1

PROVINCIAL AND REGIONAL SETTING OF SUDBURY DISTRICT

--- District Administrative Boundary

— Northeastern Region Administrative Boundary

-·- Provincial Boundary

--- International Boundary

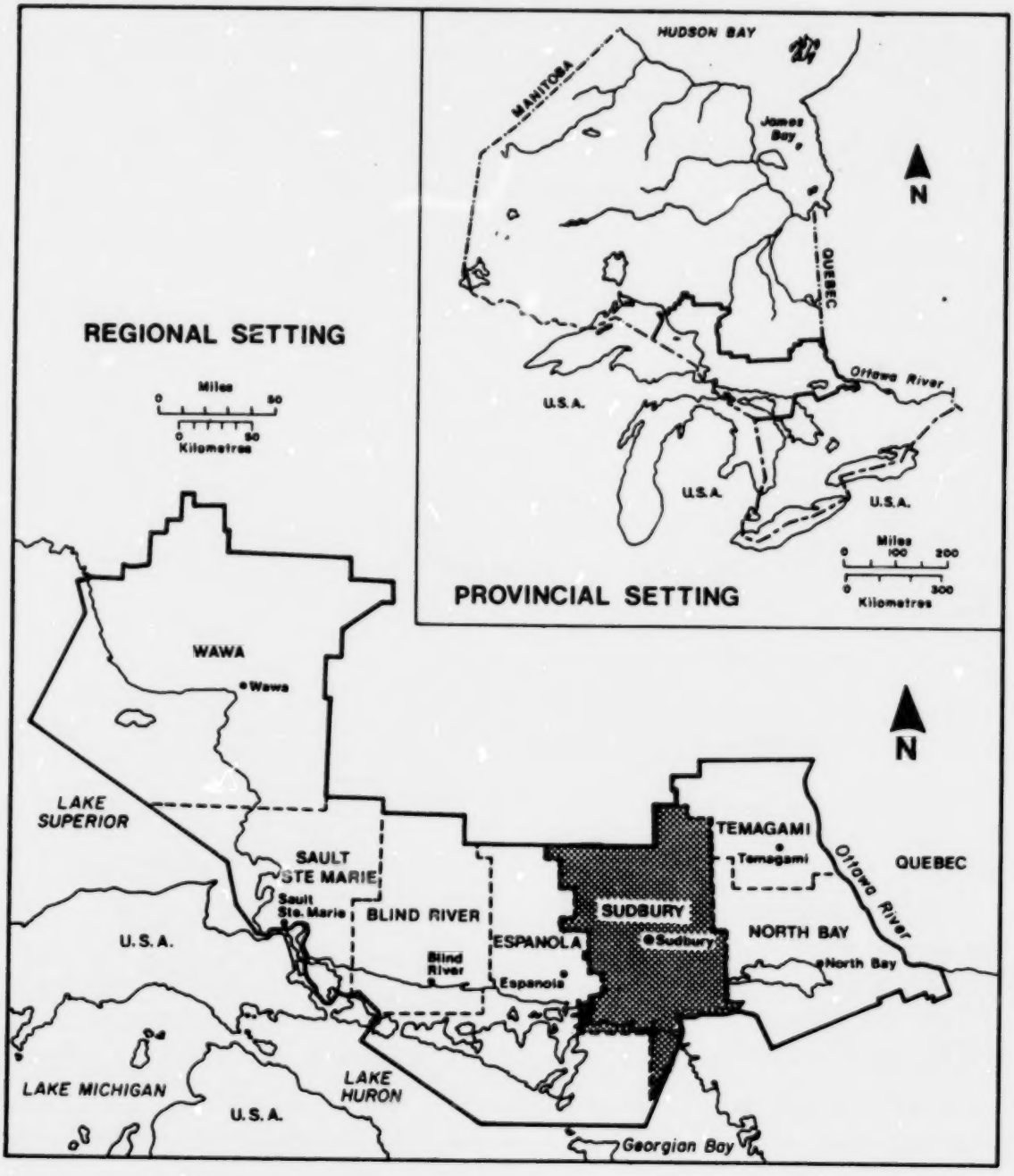


Figure 1

Reserves: Point Grondine Indian Reserve No. 3, located on the North Shore of Georgian Bay; Whitefish Lake Indian Reserve No. 6, located west of the city of Sudbury; and Wanapitei Indian reserve No. 11, on the northwest shore of Lake Wanapitei. Twelve townships located in the northeast corner of the District are under a caution registered by the Bear Island Indians of Temagami.

Sudbury District is divided into two separate drainage systems. The eastern portion is drained by the Sturgeon-Wanapitei-French River systems to Georgian Bay and the western portion is drained by the Spanish and Vermilion River Systems. Local topography and drainage are influenced by underlying Precambrian bedrock of the Canadian Shield and by unconsolidated sediments deposited during the Pleistocene and Recent eras. The district is predominantly composed of moderately broken uplands in the northwest, central and southeast portions. Areas of strongly broken uplands are located in the southwest (La Cloche Mountains) and northeast (Ishpatina Range) portions of the district.

Soils of the district are predominantly sands which range in texture from coarse to fine and silty. Pockets of clays and large areas of loams are found in the southern and southeastern portions of the district. Soil depths are very closely related to topography. Deep soils are associated with the major river valleys and flood plains (i.e.: Wanapitei and Vermilion). Bare and shallow soils predominate throughout the southern half of the district and are quite common in the northern portions as well.

The Sudbury area is characterized by a modified continental climate consisting of warm, short summers, and cold, long winters. Georgian Bay and Lake Huron provide some moderating influence although the area is usually dominated by Continental polar air masses. The mean daily temperature for July is 18.8C and the mean daily January temperature is -13.4C. Temperatures fluctuate somewhat due to local variations in topography, hydrology and vegetation.

2.1.2. THE RESOURCE

The total productive inland water area in Sudbury District encompasses 129,071 Hectares; Georgian Bay accounts for an additional 155,500 Ha. (Figure 2). The district also has approximately 13,100 Ha of rivers and streams which are considered significant to the fisheries resource (Figure 2). There is a small amount of water (20,500 Ha) about which very little is known. (Figure 2).

At present, at least 9% of the district's water surface area is believed to be producing below full potential due to a variety of stresses.

Distribution of sportfish species throughout district waters is shown on the Background Information map, (Figure 3 - back cover pocket). Figure 4 indicates supply of sportfish species in the district according to available water area.

WATER SURFACE AREA IN SUDBURY DISTRICT

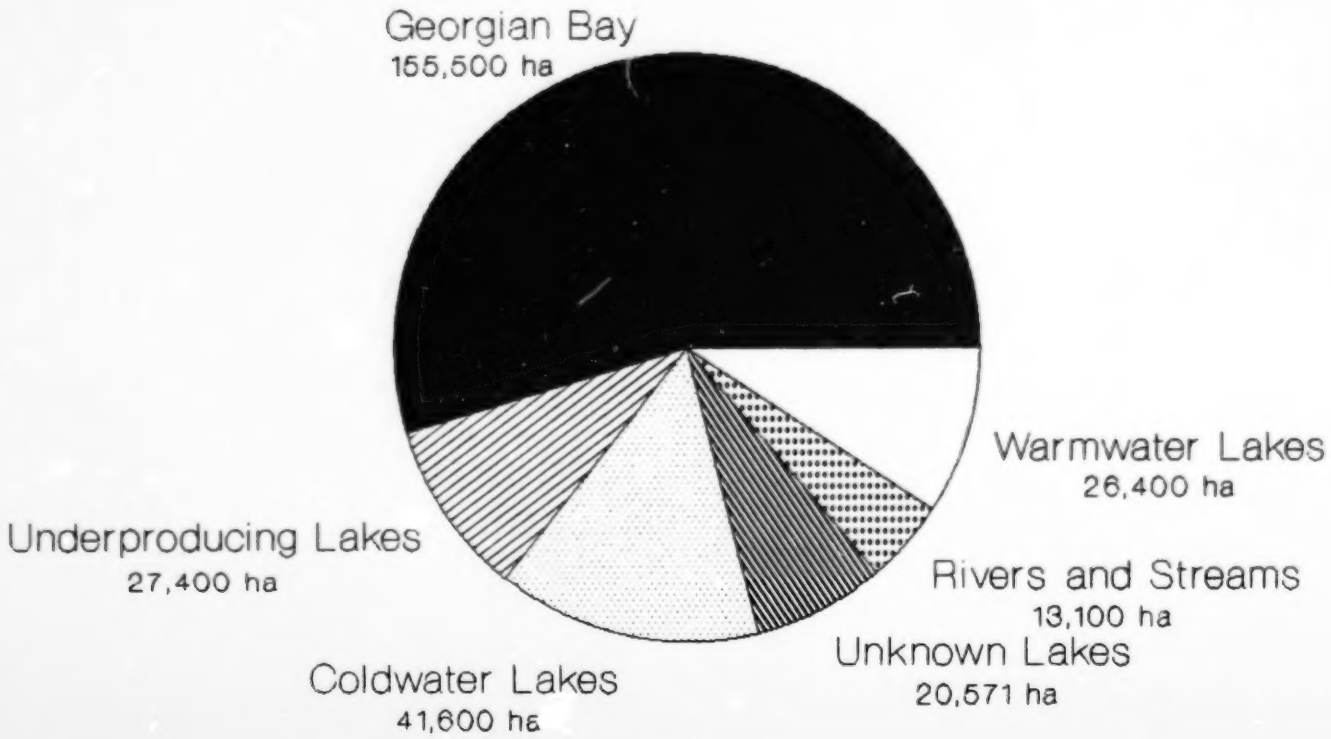
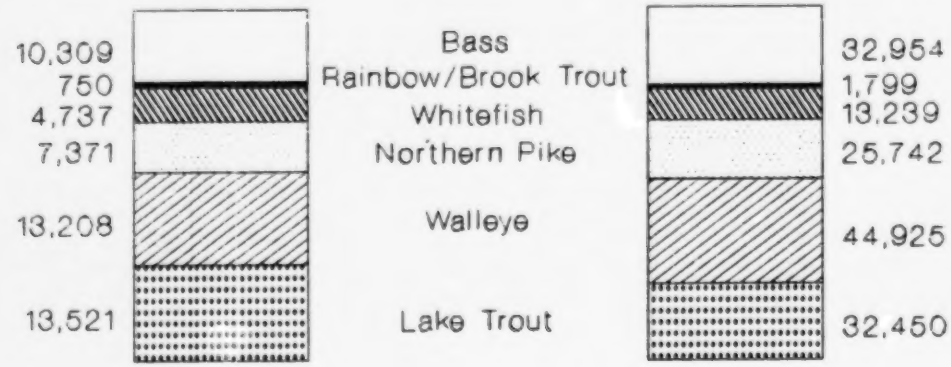


Figure 2.

DISTRICT SUPPLY OF SPORTFISH SPECIES AND AVAILABLE INLAND WATER AREA



a) Available Habitat (ha)

b) Sportfish Supply (kg/yr)

Figure 4.

Sudbury District inland waters, have a sustainable supply of approximately 151,000 kg of fish per year, (Figure 5). Georgian Bay accounts for an additional 116,895 kg of fish, which represents 36% of the District's total supply. However, this area receives only 3% of the District's total angling pressure (Figure 6).

2.2 RESOURCE USE AND PROJECTIONS

The fisheries resource in Sudbury District provides recreational opportunities and is the resource base upon which several industries depend.

Current sport fishing pressure in the district is estimated to be approximately 420,000 angler-days annually. (An angler-day is considered to be four hours of fishing). Approximately 27% of this total is generated by non-resident anglers.

Harvest data indicates that approximately 35% of anglers prefer to fish for walleye; 40% fish for trout and the remaining 25% direct their efforts to other species (pike, perch, bass, whitefish). At present, district walleye and trout populations in inland lakes are being harvested at a level beyond the allowable yield, while other species are being underutilized, (Figure 5).

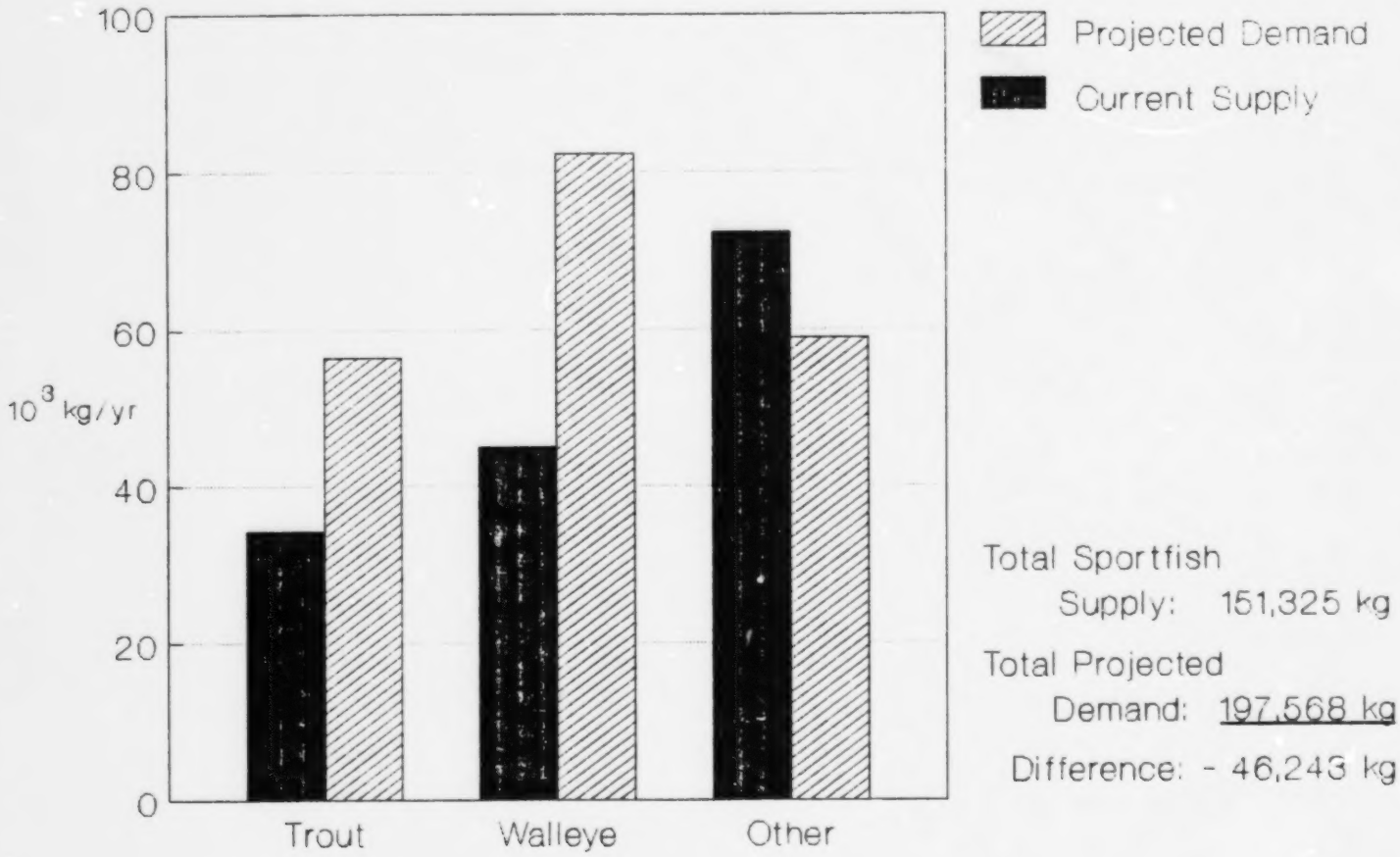
By the year 2000, more than 200,000 kg of sportfish will be required to meet angler demand (Figure 5 and 6). In order to satisfy the anticipated angler demand, management strategies will be directed towards providing an additional 22,000 kg of trout and 37,000 kg of walleye to district waters in attempts to eliminate the sportfish deficit. These targets may not be attainable within the Fisheries Plan time frame due to limitations in quality of available habitat. A surplus of other species (pike, perch, whitefish and bass) exists throughout district waters. Anglers will be encouraged to utilize these alternate species to alleviate pressure on trout and walleye. A surplus of all sportfish species exists in Georgian Bay and management efforts will attempt to direct angling efforts to this underutilized area to relieve pressure on inland sportfish populations (Figure 6).

There are 7 commercial fishing licenses issued in Sudbury District for Georgian Bay. The commercial fish harvest as well as the allowable harvest quota for Georgian Bay is presented in Table 1. Average annual harvest (1976 to 1985) is reported at 68,545 kg with a landed value of $113,968.80 (Table 1). A comparison of reported harvest with allowable quotas indicates that most species are underharvested (Table 1).

An average of 72 baitfish harvesting licenses have been active in the district since 1976. Annual harvest of baitfish species is 83,202 dozen, for an average landed value of $83,648.11 (Table 1).

The projected demand for baitfish is expected to increase 12% by the year 2000, corresponding to the anticipated increase in angling pressure. Certain baitfish waters in the district are currently underutilized and therefore, the baitfish target is likely to be achieved within the Plan's time frame.

SPORTFISH SUPPLY AND DEMAND-
INLAND WATERS



Total Sportfish
Supply: 151,325 kg

Total Projected
Demand: 197,568 kg

Difference: - 46,243 kg

Figure 5

SPORTFISH SUPPLY AND DEMAND-
GEORGIAN BAY

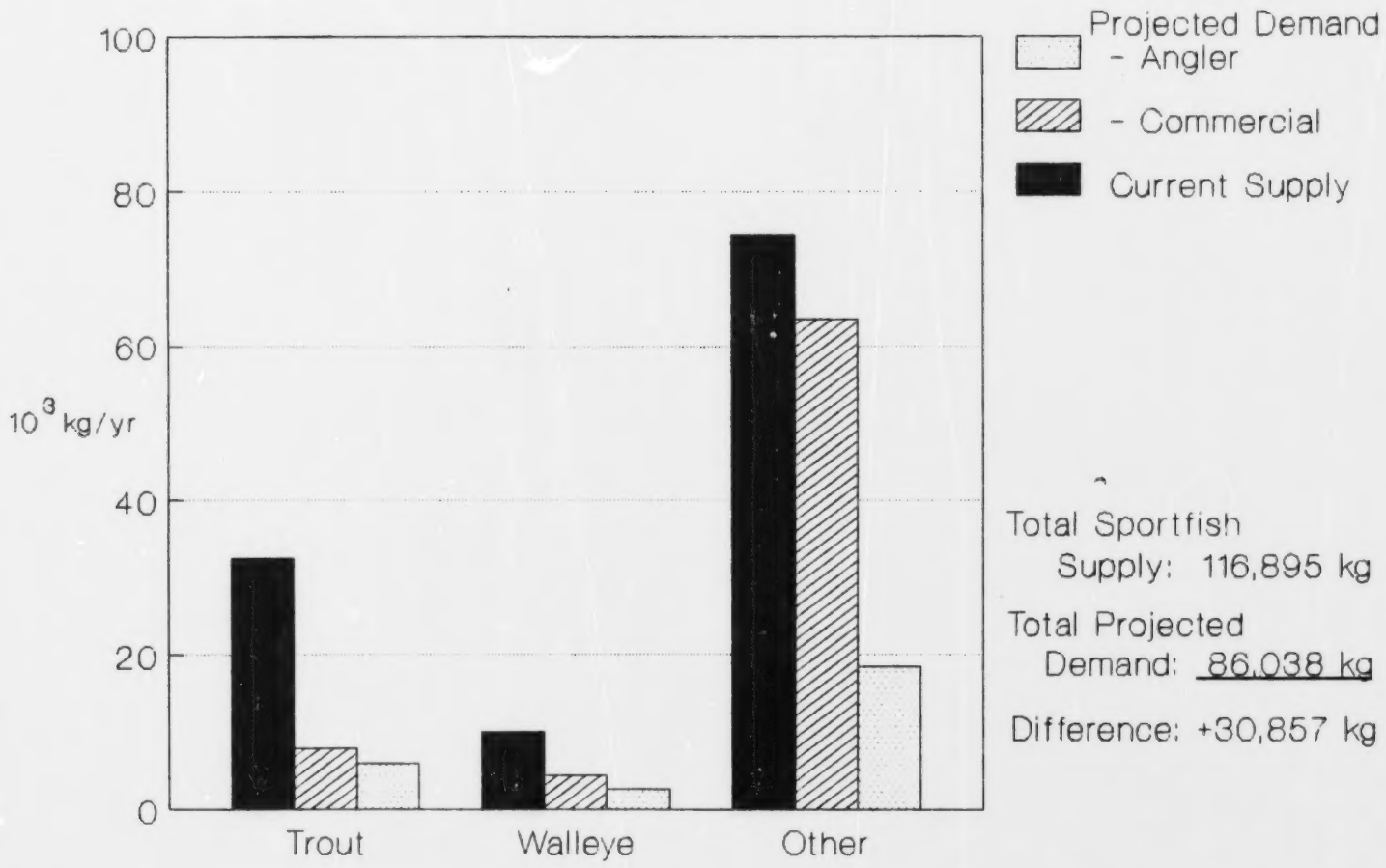


Figure 6.

Table 1

SUMMARY OF COMMERCIAL FISH HARVEST, LANDED VALUE AND ANNUAL QUOTAS, SUDBURY DISTRICT, (1976 - 1985)

SPECIES	*ANNUAL HARVEST (Kg)	*ANNUAL LANDED VALUE ($)	ALLOWABLE HARVEST QUOTAS (Kg)
Georgian Bay			
Lake Chub	8,811.4	15,422.17	16,267.0
Lake Whitefish	16,579.0	25,559.92	32,099.00
Walleye	6,504.5	16,310.65	2,572.00
Perch	21,294.0	43,670.67	25,106.0
Splake	1,914.7	4,375.89	1,989.0
Pink Salmon	----	----	1,275.0
Pike	1,403.5	808.24	1,749.0
*** Other Species	12,010.8	7,821.26	no quota
TOTAL	68,544.0	$113,968.80	81,057.0+
Inland Waters:			
Baitfish	83,202 dozen	83,648.11	quota controlled by number of license areas available.

* 10 year average 1976 to 1985

** 3 year average 1984 to 1986. Quotas implemented in 1984. Quota for Pink Salmon implemented 1985.

*** Other species includes fish not governed by quota, e.g. herring, and various coarse fish and pan fish species.

An estimate of the district's Native fish harvest is not available. Negotiations with Indian Bands and the Federal and provincial governments are pending to establish Native Fishing Agreements. The outcome of these agreements may have an effect on sportfish allocation in some areas of the district.

There are approximately 90 tourist operators in Sudbury District who rely upon the sportfish resource for all or part of their business. Approximately 30 per cent of these businesses are located in the French River area, where client angling is targeted on walleye.

2.3 PRESENT MANAGEMENT PRACTICES

A major component of the District's fisheries management program is the review of, and input to, plans and proposals which may affect the fisheries resource. These include Timber Management Plans, Environmental Assessments, municipal plans, Provincial Park Management Plans, subdivision and severance proposals, drainage plans, proposals for energy transmission corridors, applications under the Lakes and Rivers Improvement Act and proposals for road or highway construction and maintenance.

Information about fish populations, harvests and habitats is essential for good management of the resource. A unique provincial research program, the Sudbury Basin Study (SBS), has been headquartered in the district to investigate impacts of acidification on fish resources and its implications for fisheries management. Since its inception in the early 70's, the study has been committed to determining the extent of fish resources lost or at risk to acidification, as well as development of experimental, rehabilitative techniques and procedures.

Additional data collection projects in the district have included lake habitat inventories, netting surveys, electroshocking studies, stocking assessments, spawn site mapping, work site inspections, creel surveys and monitoring for contaminants such as mercury. Most of these programs have been concentrated on the district's most heavily fished waterbodies, on lakes where a problem was suspected or where waters were being considered for stocking or other specific management programs.

Enforcement is also a key component of the district's fisheries management program. There are six full-time Conservation Officers and one half-time (six months enforcement; six months parks superintendant) Officer who work on both fisheries and wildlife enforcement. Fisheries enforcement by these officers is approximately 600 man-days annually, with an additional 30 man-days contributed by Deputy Conservation Officers. With the exception of one officer assigned to commercial fisheries enforcement on Georgian Bay, lake trout and brook trout waters are the main enforcement priority within each officer's management area since they are limited in the district and are most sensitive to exploitation. In the past, most emphasis was on enforcement to control exploitation and protect spawning fish. These areas continue to be important; however in recent years there has been additional effort placed on enforcement to prevent habitat degradation.

Control of the fish harvest has also been achieved through use of seasons, sanctuaries, live bait restrictions and catch limits.

Stocking is probably the fisheries management activity which is most familiar to the general public. Stocking has been used to introduce new species to waterbodies, to supplement existing populations and to rehabilitate populations which have declined or disappeared. In the past, lake trout and brook trout were the main species stocked, with some stocking of rainbow trout, muskellunge, bass and walleye. More recently there has been additional emphasis on the stocking of walleye, rainbow trout and splake. A summary of stocking in the district since 1984 is shown in Appendix I. There have also been a number of Community Fisheries Involvement Projects (C.F.I.P.) implemented in the district recently to rear walleye and rainbow trout. Interested groups and individuals in the area have volunteered their time to co-operate with the Ministry of Natural Resources on these projects. In some instances it may be necessary to remove one or more undesirable species from a lake before it can be stocked with preferred species. Some district lakes have previously been reclaimed in this way.

Work has also been done at various locations throughout the district to create or rehabilitate spawning beds. C.F.I.P. groups and Special Employment Projects have contributed to this habitat improvement work.

A large percentage of district fish and wildlife staff time is spent responding to questions, concerns and requests from the public. This includes issuing news releases, publications and brochures, formal presentations, discussing problems by phone or in person, investigating complaints in the field and assisting landowners with evaluations of ponds to determine their suitability for stocking. There are also a number of projects which are co-operative efforts between this Ministry and other agencies or groups. Some examples include water sample analysis and contaminant monitoring with Ministry of Environment, co-operating with staff and students of universities (eg: Laurentian, Trent, University of Toronto) who are conducting studies, C.F.I.P. projects conducted by local clubs and groups and joint projects with the Nickel District Conservation Authority.

2.4 SUPPLY/DEMAND ANALYSIS AND TARGET REFINEMENT

The goal for fisheries management in the Ministry of Natural Resources is "to protect, enhance, maintain, and rehabilitate fish communities and their environment in order to provide an optimum contribution of fish, fishing opportunities and their associated benefits to society". The Sudbury District Land Use Guidelines (D.L.U.G.) also identified objectives and targets for sport fishing. A summary of present fisheries resource capability and anticipated demand by the year 2000 is provided in Figures 5

and 6. At present, many waterbodies in the district are not producing to their full potential and would require improved water quality and additional management effort to do so.

The sport fish supply given in D.L.U.G. was 125,000 Kg/yr. New information, combined with reworking of old data has indicated a current supply of 151,000 Kg/yr. In addition, the sportfish supply target has been revised from 204,000 Kg/yr to 220,000 Kg/yr by the year 2000. Similarly, the refined data reflects an upward trend in the year 2000 angler-demand target to 470,000 angler-days from the previous 452,000.

Upon completion of the fisheries management plan, with public consultation, the D.L.U.G. targets will be amended to reflect new information.

Commercial fishing quotas have been established for Georgian Bay and are modified when biological data suggests it is necessary. Actual harvest of commercial fish species is dependent upon market conditions. The commercial fishery will be encouraged to take the annual allowable harvest.

Demand for baitfish will likely increase in proportion to an increase in the sport fishery. Baitfish are presently underharvested in parts of the district and some operators culture and rear their own baitfish. The resource will presumably be able to meet projected demands. Baitfish licenses are issued on an area - specific basis with the eventual goal of having one major operator per baitfish management area.

2.5 CONCERNS AND ISSUES

There are numerous concerns and issues which affect the fisheries resource and its management in Sudbury District. The major concerns include insufficient resource data, fish habitat loss or degradation, including underproducing waters, lack of public and resource manager awareness, over-harvest of specific resources, and user conflicts, including access control.

A description of the major fishery concerns includes:

2.5.1. INSUFFICIENT FISHERIES DATA BASE

Effective fisheries management is dependent upon a comprehensive data base. We require more information about use and demand on the resource, fish communities and their respective habitats, the effectiveness of stocking programs, and the status of commercial food and baitfish populations.

2.5.2. LOSS OR DEGRADATION OF FISH HABITAT

Loss or degradation of fish habitat includes both the loss of physical structures such as spawning beds and the impairment of water quality. Factors which can have detrimental impacts on district fisheries habitat include shoreline modifications, water level fluctuations, acidification, agricultural and timber management practices, drainage programmes, industrial pollution and contaminants such as mercury.

2.5.3. PUBLIC/RESOURCE MANAGER AWARENESS

Fisheries management programmes will not succeed if they are not understood and supported by the general public. It is essential that the public understand the problems and their underlying causes while appreciating the concepts of aquatic ecosystem productivity, species interactions and sound management practices. A common misconception is that stocking is the only solution to a shortage of fishing opportunities, even though it may not be economically or biologically feasible and there may be more appropriate management techniques available. Alternatively, support for district fisheries programmes will best be secured through open communications between resource users and resource managers. This will allow the resource manager to become more aware of public perceptions and preferences in fisheries management.

2.5.4. EXPLOITATION

Over-exploitation occurs if the productivity of a specific fish resource is diminished by the effects of fishing. Winter lake trout harvest and illegal sportfish harvest contribute to this concern.
There are some lakes in Sudbury District that are overharvested.

2.5.5. USER CONFLICTS

Competition for the fisheries resource exists between a variety of user groups. For example, commercial versus sport fishermen, tourist industry versus local anglers. User conflicts may also arise when the angling public attempts to access a fishery through private property.

3.0 OPTIONAL MANAGEMENT STRATEGIES AND TACTICS

3.1 INTRODUCTION

A number of optional management strategies and tactics to address the previously mentioned fisheries concerns were evaluated by distict fisheries staff. Management strategies are planned actions or measures which will be followed to achieve the identified targets. Tactics are the specific methods which are employed to achieve the strategies.

Some options were not considered feasible and will not be presented here. Other options may be suggested by the public during this planning process. Public participation is required to help select preferred management strategies and tactics which will be used in the final Sudbury District Fisheries Management Plan.

3.2. STRATEGIES AND TACTICS

The District Fisheries Management Plan will provide a general management direction to the year 2000. Specific management actions for the initial five years will also be identified.

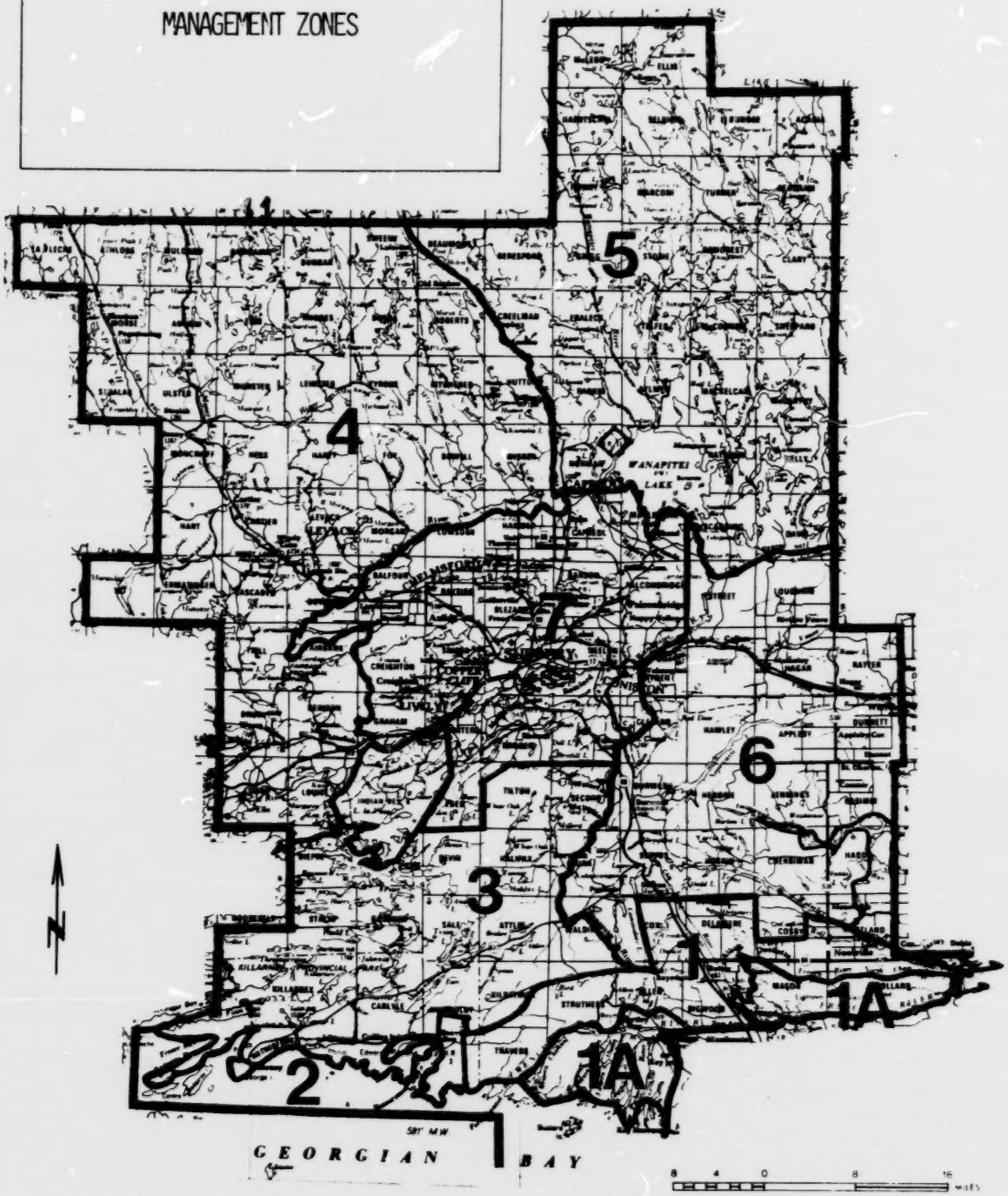
Lake specific management may be feasible by establishing small district fisheries management zones (Figure 7). Proposed zones are determined according to existing water quality; area specific user patterns; fish communities and fisheries related concerns.

Optional management strategies and tactics to address concerns in each zone are outlined below, with examples of where and how tactics may be appied.

LEGEND

PROPOSED FISHERIES MANAGEMENT ZONES

SUDBURY
ADMINISTRATIVE DISTRICT
NORTHEASTERN REGION



ZONE 1. FRENCH RIVER DRAINAGE AREA

The fish communities of Zone 1 are composed primarily of naturally reproducing warmwater species. The French River is the major waterbody in the zone and it experiences the heaviest angling pressure in the district. The area is fully accessed and heavily developed with both tourist operations and cottages. Complaints about poor fishing - especially for walleye, are common and creel surveys have confirmed that the river is over-exploited. In addition to exploitation, some fisheries habitat problems exist and more fisheries data collection is required.

CONCERN: EXPLOITATION

STRATEGIES	TACTICS
Reduce Harvest	- Decrease catch possession limit for walleye on French River. - Decrease catch/possession limit for all game species on French River. - Implement slot size for walleye to protect brood stock. - Prohibit winter fishing for walleye on French River. - Prohibit winter fishing for all game species on French River (i.e. establish a winter sanctuary). - Promote live release of fish through seminars, brochures, etc. - Prohibit use of stringers and live boxes on French River. (Fish may be killed if held for a long time before release). - Establish sanctuaries for certain time periods to protect critical areas where fish congregate, (e.g. walleye and bass spawning areas). - Increase enforcement effort. - Monitor success of program.
Stock Fish	- Continue to support C.F.I.P. stocking of Vermilion River walleye into the French River. This stock of walleye appears to be faster growing and matures at an earlier age than the French River stock.

Zone 1.

STRATEGIES	TACTICS
Reduce Harvest (con't)	- Locate other water bodies in the zone which might be suitable for stocking. Examples might be Upper and Lower Sturgeon Rivers for lake trout or splake; George #12, #13, and Hilltop lakes for rainbow trout. - Monitor success of stocking program.
Redirect Pressure	- Assess potential of other rivers in the zone to provide alternate angling areas (e.g. Wahnapitei, Murdock and Wolseley). - Locate other lakes which could accommodate angling pressure or be stocked. Advertise the names and locations of these lakes or rivers.

Note: The establishment of a separate angling division for the French River would facilitate implementing some of the above tactics.

CONCERN: HABITAT

STRATEGIES	TACTICS
Protect Existing Habitat	- Ensure that water levels are maintained to protect fish during spawning and hatching seasons, by providing input into weekly spring conference calls with Ontario Hydro. - Map location of critical fish spawning and nursery areas, especially for walleye, pike, bass and muskellunge. - Provide input into development plans to ensure protection of critical areas. - Conduct Fall netting program in lower French River to assess spawning migrations. - Monitor sturgeon populations and attempt to locate and protect spawning areas.
Create New Spawning Habitat	- Identify areas where new spawning habitat can be created or improved (e.g. Meshaw Falls).

ZONE 2: GEORGIAN BAY

Commercially fished waters of Georgian Bay as well as angling waters and outlets of tributaries from Fraser Bay to Key Harbour comprise Zone 2. Fish stocks, particularly walleye and lake trout, in some portions of this zone have been depleted by overexploitation as well as degradation of habitat. The offshore supply of all species currently exceeds angler demand.

CONCERN: EXPLOITATION

STRATEGIES	TACTICS
Reduce Harvest	- Continue with commercial fishery modernization program. - Adjust quotas to reflect updated fisheries assessment data. - Implement slot size limit for walleye to protect brood stock. - Establish fish sanctuaries for certain seasons to protect critical areas where fish congregate (e.g. walleye, bass and pike spawning areas). - Increase enforcement effort.
Redirect Pressure	- Encourage charter boat operations to utilize offshore fishery where surplus fish exist. - Promote winter fishery for splake.
Stock Fish	- Support splake cage culture program to provide replacement species for decimated lake trout. Cage culture stocks appear to be faster growing and more economical to raise than hatchery stocks. - Locate river systems in the zone which might be suitable for stocking rainbow trout. - Continue to support C.F.I.P. stocking of Vermilion River walleye into Georgian Bay. - Monitor success of stocking program.

Zone 2.

CONCERN: USER CONFLICTS

STRATEGIES	TACTICS
Minimize Conflicts	- Support use of impoundment gear by commercial fishermen. Trap nets allow for live release of fish. - Liaise with conflicting user groups regularly to discuss concerns before they become problems. - Support co-operative C.F.I.P. projects with tourist operators, local residents and commercial fishermen as co-proponents.
Redirect Pressure	- Review commercial fishing boundaries; modify as required to minimize conflicts with anglers. - Maintain current boundaries for commercial fishing licences.

CONCERN: HABITAT

STRATEGIES	TACTICS
Protect Existing Habitat	- Map locations of critical fish spawning and nursery areas, especially for walleye, pike and bass. - Map location of barriers to fish movement in tributaries. - Provide input to development plans to protect critical habitat. - Continue population assessments on Commercial fishing boats to monitor fish species relative abundance. - Investigate Mahzenazing River to determine cause for loss of walleye from the river.
Create New Habitat	- Identify areas where spawning habitat can be created or improved. An example might be Mahzenazing River for walleye spawn site creation. - Monitor success of habitat improvement projects.

ZONE 3. KILLARNEY UNIT

Native populations of lake trout, brook trout and smallmouth bass have declined or disappeared from as many as 40 lakes in the zone as a result of historic levels of sulphur dioxide (SO2) emissions from smelters in Sudbury. Extensive re-surveys, completed during the winter 1987, indicate that water quality in zone lakes has improved significantly since 1980.

Degraded fish habitat is the main concern in the zone, but district creel surveys have confirmed that Lake Panache receives heavy fishing pressure. Intensive rehabilitaiton projects are planned or are in progress for several water bodies including George, Peter, Bell, A.Y. Jackson, Acid, Terry and Partridge lakes and the Chikanishing River.

CONCERN: HABITAT

STRATEGIES	TACTICS
Stock Fish to Rehabilitate	- Locate water bodies in the zone that might be suitable for stocking. Examples may include Billy, Grey, Carlyle, Partridge, Sandy, Whiskey Jack, Turbid, David, Kirk, Sunfish and the Lumsden lakes for rainbow trout. Clearsilver, MNR #9, 17, 31 and 32 lakes for splake. Bertha and Badgeley Island lakes for brook trout. Johnnie, Great Mountain, Little Mountain, Acid, Killarney, Norway, O.S.A., Three Narrows, Millerd and MNR #30 for lake trout. - Monitor success of stocking program.
Protect Existing Habitat	- Map locations of barriers to fish movement in rivers and streams commencing with the Mahzenazing and Chikanishing Rivers. - Map locations of spawn sites for pike, walleye, lake trout and bass.
Create New Spawning Habitat	- Identify areas where new spawning habitat can be created or improved (e.g. Lake Panache - Little Gabodin Creek). - Monitor success of habitat improvement projects.

Zone 3.

CONCERN: EXPLOITAITON

STRATEGIES	TACTICS
Stock Fish	- Continue C.F.I.P. stocking of Vermilion River walleye to Lake Panache. - Monitor success of stocking program.
Reduce Harvest	For Lake Panache: - Decrease catch/possession limit for walleye. - Decrease catch/possession limit for all game species. - Implement slot size for walleye to protect brood stock. - Prohibit winter fishing for walleye and lake trout. - Prohibit winter fishing for all game fish species. - Prohibit use of stringers and live boxes. For all zone waters - Prohibit winter fishing on George and Bell Lakes to protect lake trout. - Establish fish sanctuaries for certain seasons to protect critical areas where fish congregate (e.g. walleye and bass spawning areas). - Promote live release of fish through seminars, brochures, etc. - Increase enforcement effort. - Monitor success of program.
Redirect Pressure	- Locate other lakes which could accommodate angling pressure or be stocked. Advertise the names and locations of these lakes.

ZONE 4: NORTHWEST QUADRANT

The fish communities of Zone 4 are composed primarily of naturally reproducing warmwater species. The walleye population of the Vermilion River appears to be faster growing and matures at an earlier age than walleye stocks in other waters in the region.

A significant portion of the zone's coldwater fishery is maintained through stocking of hatchery fish. Stocking assessments have confirmed that many lakes are subject to oxygen depletion in winter resulting in death of stocked fish. In addition to oxygen deficits and other habitat problems, exploitation is also a concern in some lakes and further fisheries data collection is required.

CONCERN: EXPLOITATION

STRATEGIES	TACTICS
Stock Fish	- Locate water bodies in the zone which may be suitable for stocking. Examples may include Sans Chambre, Africa (Lost), Dragonfly, Mountain, Pistol, Twin, Dunbar, Pigeon, Little Penage, Tower, Alaska, Watson and Elboga lakes for rainbow trout. Athlone, Roland, Cascaden, Whitefish, Franklin, and Ross lakes for splake. Antrim, Whitefish and Onaping lakes for lake trout. Hutton lake for brook trout. - Continue C.F.I.P. stocking of walleye into Geneva and Ministic lakes. - Monitor success of stocking program.
Reduce Harvest	- Establish spring sanctuaries in problem areas to protect walleye brood stock, (e.g. Vermilion Lake). - Maintain winter sanctuaries on Nelson and Fox lakes to protect lake trout populations. - Increase enforcement effort.
Redirect Pressure	- Assess potential of rivers in the zone to provide alternate angling areas. Examples might include Onaping, Nelson and Rapid rivers, Pumphouse, Geneva, Centre, John and Wisner Creeks. - Advertise names and locations of these waters.

Zone 4

CONCERN: HABITAT

STRATEGIES	TACTICS
Protect Existing Habitat	- Ensure that water levels are maintained to protect fish during spawning and hatching seasons through liaison with Ontario Hydro. - Map locations of critical fish spawning and nursery areas, especially for brook trout, lake trout, and walleye. - Provide input to development plans to ensure protection of critical fish habitat.
Create New Habitat	- Identify areas where new spawning habitat can be created or improved. Examples may include Vermilion River, Ministic, Geneva, Pogamasing and Fox lakes. - Monitor success of habitat improvement projects.

ZONE 5. NORTH EAST QUADRANT

The resident fish populations in Zone 5 have been decimated by the effects of acidification. The majority of lakes in the zone are not producing fish at their maximum sustained level due to poor water quality. However, recent surveys have confirmed that water quality is improving and potential to expand the range of salmonids may eventually be possible through stocking.

CONCERN: HABITAT

STRATEGIES	TACTICS
Protect Existing Habitat	- Map locations of critical fish spawning and nursery areas, especially for walleye and lake trout. An example may include Lake Wanapitei. - Ensure water levels are maintained to protect fish during spawning and hatching seasons through liaison with Ontario Hydro. - Provide input to development plans to ensure protection of critical fish habitat.
Create New Habitat	- Identify areas where new spawning habitat can be created or existing areas can be improved (e.g. Washigami and Murray lakes and the Sturgeon River). - Monitor success of habitat improvement projects.
Stock Fish	- Locate waterbodies in the zone which may be suitable for stocking. Examples include Button, Parsons, Nox, Big Valley, Evelyn, Kearns, Stanley, Sawhorse, Fly, Cache, Portage, Spar, Halleck, Upper Eagle Nest, Stobie, Loon, MNR #1 and #32 lakes for rainbow trout. Lonely, Tillie, Brenan, Gold, Harvey, Lower Matagamasing, McCarthy, Rawson, Fly, Selwyn, Linger, Selkirk, Hicks, Mickey and Frederick lakes for splake. Red Pine and MNR #1 for brook trout. Helen, Dougherty, Matagamasi, Colin Scott, Donald, Selkirk, Chiniguchi and Telfer lakes for lake trout. - Monitor success of stocking program.

ZONE 5.

CONCERN: EXPLOITATION

STRATEGIES	TACTICS
Reduce Harvest	- Establish spring sanctuaries in problem areas to protect walleye brood stock (e.g. North River). - Prohibit winter fishing for lake trout in Fraleck Lake to protect brood stock. - Promote live release of fish through seminars, brochures, etc. - Increase enforcement efforts.
Redirect Pressure	- Assess potential of rivers in the zone to provide alternate angling areas. Examples may include East Wahnapitei and Sturgeon Rivers, Carafel, Post, Mowat and Parkin Creeks. - Locate other lakes which could accommodate angling pressure or be stocked. Advertise the names and locations of these waters.

ZONE 6. SOUTH EAST QUADRANT

The fish communities of Zone 6 are composed primarily of naturally reproducing warmwater species. Nepewassi, Trout and the West Arm of Lake Nipissing are the major waterbodies in the zone. The area is fully accessible and heavily developed with both tourist operations and cottages. Complaints about poor fishing, especially for walleye are common and creel surveys have confirmed that angler catch per effort ratios are low. In addition to exploitation, fisheries habitat problems also exist and some fisheries data collection is required.

CONCERN: EXPLOITATION

STRATEGIES	TACTICS
Stock Fish	- Support Provincial walleye fingerling stocking program by providing staff and target lakes as required. Examples of target lakes might include Lovering, Sheppard, Burnt and Horseshoe. - Continue C.F.I.P. stocking of Vermilion River walleye into Crooked, Ink, Bear and Trout lakes. - Locate other waterbodies that might be suitable for stocking. Examples may include Pure, Judge and Naraka lakes for rainbow trout. - Monitor success of stocking programs.
Redirect Pressure	- Assess potential of rivers in the zone to provide alternative angling areas (e.g. Veuve River). - Locate other waterbodies which could accommodate angling pressure or be stocked. - Advertise the names and locations of these waters.
Reduce Harvest	- Promote live release of fish through seminars, brochures, etc. - Establish fish sanctuaries for certain time periods to protect critical areas where fish congregate (e.g. walleye, bass, pike and muskellunge spawning areas). - Prohibit use of stringers and live boxes on West Arm, (fish may die if held for an extended time before release). - Prohibit winter fishing for lake trout on Trout lake.

ZONE 6.

STRATEGIES	TACTICS
Reduce Harvest (con't)	- Prohibit winter fishing for all game fish species on Trout and Bear lakes. - Prohibit winter fishing for walleye on Bear Lake. - Prohibit fishing for walleye on Bear Lake for 5 years to facilitate rehabilitation - Increase enforcement effort. - Monitor success of programs.

CONCERN: HABITAT

STRATEGIES	TACTICS
Protect Existing Habitat	- Ensure that water levels are maintained to protect fish during spawning and hatching seasons on Wahnapitei River through liaison with Ontario Hydro. - Map locations of critical fish spawning and nursery areas, especially for walleye, bass, pike and muskellunge. - Develop baitfish management guidelines. - Provide input to development plans to ensure protection of critical fish habitat.
Create New Spawning Habitat	- Identify areas where new spawning habitat can be created or improved. Examples might include Trout, Bear and Nepewassi lakes and the Wahnapitei River. - Monitor success of habitat improvement projects.

ZONE 7. SUDBURY BASIN URBAN FISHERY

The fish communities in Zone 7 are supported primarily by hatchery stock from Ministry (coldwater species) and C.F.I.P. (cold and warmwater species) hatcheries. The area is readily accessed and heavily developed with permanent and seasonal dwellings. Fish habitat degradation resulting from extensive urban development and industrialization are thought to be the major cause of poor fishing in zone waters.

CONCERN: HABITAT

STRATEGIES	TACTICS
Protect Existing Habitat	- Provide input to development plans to ensure protection of critical fish habitat. - Map locations of fish spawning and nursery areas, especially for walleye, bass, pike, and lake trout.
Create New Habitat	- Identify areas where new spawning habitat can be created or improved (e.g. Whitson, Richard and McCrea lakes). - Monitor success of habitat improvement projects.

CONCERN: EXPLOITATION

STRATEGIES	TACTICS
Stock Fish	- Continue C.F.I.P. stocking of walleye into suitable zone lakes including Ramsey, Richard Whitson and McFarlane. - Locate other lakes in the zone which may be suitable for stocking. Examples may include McCrea, Clearwater, Amy and Little Amy for rainbow trout. Blue and Ella lakes for splake or lake trout. - Monitor success of stocking programs.
Redirect Pressure	- Locate lakes which could accommodate additional angling pressure or be stocked. Purchase land to provide public access to these lakes if required. - Advertise the locations of these waters and respective access points. An example might be Long Lake.

ZONE 7.

STRATEGIES	TACTICS
Reduce Harvest	- Maintain winter sanctuary on Ramsey Lake to protect walleye brood stock. - Increase enforcement effort. - Monitor success of program.

4.0 PUBLIC REVIEW

This report has been prepared to provide the public with information about the District's fisheries resource and optional management strategies and tactics. Public participation is important to help us identify errors or omissions in the background data and to select preferred management strategies.

You are invited to comment on this document at the Open House, or, you may complete the enclosed questionnaire and return it to the following address:

District Manager
Ministry of Natural Resources
P.O. Box 3500, Station 'A'
Sudbury, Ontario
P3A 4S2

All comments received by October 16, 1987 will be reviewed and considered when the draft Fisheries Management Plan is prepared.

SUDBURY DISTRICT FISHERIES MANAGEMENT PLAN QUESTIONNAIRE

INTRODUCTION

After reviewing the Background Information and Management Options Summary Document, you are invited to complete this questionnaire to provide comments and suggestions regarding the future of fisheries management in Sudbury District. All comments received will be considered for use in preparation of the final draft Fisheries Management Plan.

We request that you return your completed questionnaire by October 16, 1987 to:

District Manager
Ministry of Natural Resources
P.O. Box 3500, Station 'A'
Sudbury, Ontario
P3A 4S2

Please provide your name and mailing adress in the space provided, if you wish to be included on the District Fisheries Plan mailing list.

NAME: _____

MAILING ADDRESS: _____

_____

_____

POSTAL CODE: _____

Are you officially representing a specific group or organization?

YES ( ) NO ( )

Name of group/organization: _____

1) What are your interest(s) in the fisheries of Sudbury:

_____ Angler

_____ Baitfish Harvester

_____ Tourist Operator

_____ Other (please specify)

BACKGROUND INFORMATION

1) Are there any aspects of the background information that have been presented which you feel to be inaccurate?

YES ( ) NO ( )

If yes, please explain:_____

_____

_____

_____

2) Please rank the following list in the order for which you most prefer to fish (i.e. 1 = most preferred, 13 = least preferred).

_____Brook (speckled) trout

_____Lake trout

_____Lake whitefish

_____Largemouth bass

_____Muskellunge

_____Northern Pike

_____Rainbow trout

_____Smallmouth bass

_____Splake

_____Sturgeon

_____Walleye (Yellow pickerel)

_____Yellow perch

_____Other (i.e. smelt, panfish, specify species)

3) Name one fish species for which you would like to have more angling opportunities in Sudbury Distict.

_____

CONCERNS

1) Five fishery concerns have been identified in the Background Summary Document as having a major impact on the District fisheries resources.

   Please indicate their importance to you on the table below: (Circle one for each concern)

CONCERN	IMPORTANCE Very important ... Not important				
Insufficient fisheries data base	1	2	3	4	5
Fish habitat loss or degradation	1	2	3	4	5
Public and Resource manager awareness	1	2	3	4	5
Exploitation	1	2	3	4	5
User Conflicts	1	2	3	4	5

2) With reference to the above list, do you feel that the major fisheries related concerns in Sudbury District have been adequately identified?

   YES ( ) NO ( )

MANAGEMENT OPTIONS

A number of strategies have been developed to address each of the basic problems affecting the fishery resource. Each strategy has associated social and monetary costs which must be considered.

1. In order of priority (1-6), on which of the following general fisheries management strategies should the M.N.R. concentrate their efforts to address the exploitation and habitat problems?

_____ Reduce harvest

_____ Redirect angling pressure

_____ Stock fish

_____ Protect existing habitat

_____ Create new habitat

_____ Other (please explain)

_____

_____

_____

Please provide any further comments or suggestions concerning the Background Information and Management options.

Thank you for your interest and participation in the District Fisheries Management planning process.

References

Anon.	1982	Northeastern Ontario Strategic Land Use Plan
Anon.	1983	Provincial Angler Survey
Anon.	1983	Sudbury District Land Use Guidelines
Anon.	1986	A Framework for Resource Management Planning
Anon.	1987	Lake Huron Strategic Fisheries Management Plan

Appendix

APPENDIX I

SUMMARY OF WATERBODIES STOCKED IN SUDBURY DISTRICT 1984 TO 1987

LAKE TROUT	BROOK TROUT	RAINBOW TROUT (C.F.I.P.)	SPLAKE	WALLEYE (C.F.I.P.)	SMALLMOUTH BASS (C.F.I.P.)
Antrim Lake	Beaver Lake	Boot Lake	Beaver Lake	Bear Lake	Frenchman Lake
Beaver Lake	Benson Lake	Johnson Lake	Nepahwin Lake	French River	Whitewater Lake
Bell Lake	Camp Ten Lake	Loon Lake		Frenchman Lake	Whitson Lake
Colin Scott Lake	Caya Lake	Mud Lake		Geneva Lake	
Davis Lake	Clear Lake	Parkin Creek		Ink Lake	
Donald Lake	Hachey Lake	Pothole Lake		* Lovering Lake	
Fox Lake	Joe Lake	Sawmill Lake		McFarlane Lake	
Fraleck Lake	Lees Lake	Shoe Lake		Murdock River	
George Lake	Little Italy Lake	MNR #9 Lake		Panache Lake	
Helen Lake	Long Lake	MNR #29 Lake		Ramsey Lake	
Irish Lake	Loon Lake			Richard Lake	
Kettyle Lake	Lost Lake			* Rock Lake	
Kukagami Lake	Lynn Lake			* Sheppard Lake	
Kunska Lake	Massey Creek			Trout Lake	
Laundrie Lake	McDonald Lake			Vermilion Lake	
Long Lake	McFie Lake			Vermilion River	
Michaud Lake	Mine Lake			Wabagishik Lake	
Millerd Lake	Moon Lake			Wanapitae Lake	
Parkin Lake	Mountain Lake			Whitson Lake	
Pedro Lake	Mousseau Lake				
Peter Lake	Mud Lake				
Potvin Lake	Mudhole Lake				
Selkirk Lake	Newton's Pothole				
Trout Lake	Norway Lake				
Tyson Lake	Pigeon Lake				
Weequed Lake	Pistol Lake				
	Poleline Lake				
	Red Pine Lake				
	Ross Lake				
	Rudy Lake				
	Second Lake				
	Shoe Lake				
	Skynner Lake				
	Snider Lake				
	Soucie Lake				
	Suez Pit Lake				
	Tank Lake				
	Watson Lake				
	Wisner Lake				

* Provincial walleye fingerling stocking program

FIGURE 3

SUDBURY DISTRICT

BACKGROUND INFORMATION

KIRKLAND LAKE
GOGAMA
TEMAGAMI
NORTH BAY
ESPANOLA
PARRY SOUND
WANAPITEI
Bonanza
LAKE
VALLEY EAST
RAYSIDE-BALFOUR
NICKEL CENTRE
SUDBURY
WALDEN
Onaping Falls
Capreol
Cartier
Levack
Hanmer
Skead
Lively
Nickel Centre
Falconbridge
Azilda
Chelmsford
Dowling
Coniston
Wahnapitae
Garson
Copper Cliff
Naughton
Lively
Whitefish
Nepewassi Lake
Round L
White Oak L
Lake Panache
Ramsey Lake
Vermilion L
Whitewater L
Wanapitei L
Wanapitei River
Vermilion River
Spanish River
Onaping River
Nelson R
Wingekisiwanan R
Sandcherry Cr
Post Cr
Ramsey Lake
Kukagami L
Lake Wahikotiwia
Ashigami
Southeast
Quirke R
Blue
Suez
Kettle Rapids
Lambert Rapids
Basin Mines
Crean Hill
Worthington
Victoria
Cameron L
Gordon L
Fairbank
Emma L
Meatbird
Milatchell
Gatchell
Boyd
Ramsey
Ramsdale
Nickeldale
Mine
Murray Mine
Frood Mine
Creighton
Dyer
Dell
Richard
Hotrum
Red Deer
Raft I
Dill I
Brodill I
Waup
Loud
Elbow
Paddy L
Waterfall
Eslaire
Chief L
Burnt L
Sled
Millerd
Burwash
Lovering
Sheppard I
Carrie
Judge
Page
Servos
Dodd
Trout Lake
Delamere
Delamere T.
Waubamik
Amatewenkea
Barlow
Haddo
Deer
Bay
Casimir
Jennings & Appleby
St. Charles
Markstay
Hagar
Ratter
Hagar Ratter & Dunnet
Dunnet
Appleby Corner
Warren
Veuve
Macpherson
Hugel
Ratter I
Lower Goose Falls
Upper Goose Falls
Halleck
Rawson
Rawson L
Lawson
Chiniguchi L
Chiniguchi R
Wanapitei R
Wolf I
McCarthy Bay
Matagamasi
Donald
Mattawagami R
Kukagami L